


11-1962

# Odor Report

Walter A. Lawrance  
*Bates College*

Follow this and additional works at: <http://scarab.bates.edu/lawrance>

 Part of the [Earth Sciences Commons](#), and the [Environmental Sciences Commons](#)

---

## Recommended Citation

Walter A. Lawrance Androscoggin River Studies Twentieth Annual Report, November, 1962, Androscoggin River Studies, Box 4, Folder 1, Walter A. Lawrance Papers, Edmund S. Muskie Archives and Special Collections Library, Bates College, Lewiston, Maine.

This Article is brought to you for free and open access by the Muskie Archives and Special Collections Library at SCARAB. It has been accepted for inclusion in Walter Lawrance Papers by an authorized administrator of SCARAB. For more information, please contact [batesscarab@bates.edu](mailto:batesscarab@bates.edu).

ANDROSCOGGIN RIVER

ODOR REPORT  
LEWISTON-AUBURN AREA

1962

Lewiston, Maine  
November, 1962

ANDROSCOGGIN RIVER STUDIES

TWENTIETH  
ANNUAL REPORT

1962

by  
Walter A. Lawrance

Lewiston, Maine  
November, 1962

TWENTIETH  
ANNUAL REPORT  
1962

INDEX

	Pages
1. Final Report, Androscoggin River Odor	1 to 22
2. Androscoggin River and Pool Studies	24 to 35
3. Special Studies Benthal Activity in the Pool	37 to 50
4. Analytical Data	51 to 128
5. Press Reports	1 to 49
6. Summaries (placed in front of page one)	23, 36, 50A
7. Plots 9a, 13a, 20a, 21a, 24a, 24b, 31a, 31b, 31c, 33a, 34a, 34b, 34c, 37a, 46a.	

## REPORT SUMMARIES

## Summary A.

1. Odor Conditions. River odor intensities during the 1962 season were either non-existent or so low, that when detectable they were not objectionable. Hydrogen sulphide was absent at the Dams during August and September. In June and July occasionally there were slight traces of this gas present but not in analytically detectable amounts. For the third successive year there was no general coverage of river odor.
2. Thermal Conditions. Air temperatures were relatively high during June but below the long range average during the remainder of the summer. July was the coldest recorded in forty-seven years. River water temperatures were of a similar pattern.
3. Precipitation and River Flows. Precipitation was subnormal through the season with the exception of August. River flows were much below normal May through July but were somewhat above average August and September.
4. Surface Conditions. There was no observable difference in foam conditions when compared with 1961. Considerable floating sludge was present North of Mile three during June and July but only small amounts during August and almost none in September.
5. Pollution Factors. Weekly factors were irregular but the seasons average (0.13) was practically the same as the 0.12 for 1961.
6. Control Period. Control extended from June 18 to October 1, 1962.

## Summary B.

1. Biochemical Oxygen Demands were lower this year from Berlin southward. The season's reduction in the Berlin area averaged about thirty percent.
2. Dissolved Oxygen was somewhat higher than in 1961. The average at the Gulf Island Dam (1.7 ppm) was the highest recorded.
3. Reseration in the Pool appeared to be lower than that in 1961.
4. Hydrogen sulphide was not present in any concentration that could be detected analytical.
5. From North Turner Bridge to Lewiston Methylene Blue stabilities (redox potentials) were the highest on record.
6. Sodium Nitrate was not required and none was used.
7. The lagoon at Berlin, N.H. was used only on a few occasions, that at Jay was employed from June 18 to September 30. Owing to very high river flows the contents of the lagoon (about 13 million gallons) were slowly discharged to the river commencing Sunday October seven.

### Summary C.

#### BENTHAL DEMAND

1. For the third successive year the daily B.O.D.'s indicate that dissolved oxygen is being consumed in considerable amounts to satisfy the demand originating in the Benthal.
2. Excluding any reaeration the apparent Contribution of Benthal was equivalent to 3.7 tons of oxygen per day.
3. Including probable reaeration the Benthal load may have been about 18 tons of daily oxygen demand.
4. The area of the Pool between the two Turner Bridges although relatively small is a very active one.

FINAL REPORT on the ANDROSCOGGIN RIVER ODOR  
in the  
LEWISTON-AUBURN AREA  
1962

Introduction.

Determination of the intensity and type of the Androscoggin River odor in the Lewiston-Auburn area was begun on June fifteen and continued daily to September twenty-seven. At frequent intervals the daily reports were mailed to all parties concerned. They are numbered one to one hundred and five. River odor intensities were insignificant.

Water temperatures were higher in June, but lower during July through September than the twenty year average. River flows were much lower than the twenty-five year average during May June and July and higher during August and September.

Weekly Pollution factors based on sulphite waste liquors were very variable but the season average (0.13) was approximately the same as in 1961.

The arrangement of this report, odor terms and calculations are essentially the same as those employed in previous reports.

Daily Report Data.

The daily reports record the

- a. Air temperatures
- b. General weather conditions
- c. Direction of the wind
- d. Water passing over the Lewiston Falls
- e. Surface appearance of the water
- f. Types of odor originating in the river water
- g. Atmospheric intensities of the river odor.
- h. Conditions at Gulf Island and Deer Rips Dams (occasionally)



This report contains tabulations and summaries of certain daily data and comparisons with other years. The 1955 report has considerable long range data relating to previous years.

Odor Observation Stations.

The locations of the odor observation stations were the same as those chosen in 1943 and used in each successive year. Stations seven (Roak-Sixth) and eight (Hampshire-Oak) were omitted this year as river odor has not been observed there since 1947.

Air Temperatures.

The mean hourly temperatures for June, July, August and September were lower than the seventy-eight year average; July was unusually cool, the average was the lowest in forty-seven years. June temperatures were higher than the long range average.

TABLE #1

Mean Hourly Air Temperatures (F.)

<u>Year</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>
1962	64.82	65.39	65.68	57.35
1961	64.08	67.27	68.06	66.03
1960	64.61	68.15	67.97	59.66
1959	59.56	70.83	69.11	61.64
78 year average	63.17	68.86	66.74	59.29
Deviation from average	+1.65	-3.47	-1.06	-1.94

Precipitation.

During the period June through September precipitation in the Lewiston-Auburn area was lower than the eighty-eight year

average. However, the precipitation during August was above the long range average.

Table #2

Precipitation (Inches) Lewiston

<u>Year</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>
1962	1.40	2.81	4.57	3.05
1961	3.15	3.46	1.61	3.92
1960	2.21	3.10	1.59	4.41
1959	5.27	1.27	2.72	2.27
88 year average	3.37	3.50	3.17	3.55
Deviation from Average	-1.97	-0.69	1.40	-0.50

Direction of  
the Wind.

During the time when the odor observations were made the direction of

the Wind, days per season, were:

North	17	South-S.West	1
North-N.West	12	South-West	3
North-West	29	South-East	2
North-N.East	1	West	5
North-East	2	Variable	3
South	25		

Northerly winds were more numerous than in 1961.

Water Flowing Over  
Lewiston Falls.

The intensity of river odor in the air is always increased when water

is allowed to flow over these Falls.

The river odor is now best described as "musty" but the intensity is so low that even when large volumes are flowing over the Falls the odor is not objectionable.

"Depth" Color of  
River Water.

The depth color is a very light brownish color and did not vary much through the season. Color tests were usually about one hundred from about mid June to September.

River Surface  
Conditions.

Foam, film and occasionally scum were present usually in small amounts on the river between the North and South Bridges. Much of the foam is due to detergents discharged by the textile mills and in the Lewiston-Auburn domestic wastes.

Floating sludge was visible in the Androscoggin Pool north of mile three during June and July. Relatively very small amounts were observed during August and September. Film coverage in the Pool was very small and even light winds may produce a "choppy" condition.

Odor Intensities.

River odor intensity averages were the lowest on record. For all practical purposes objectionable river odor did not exist in the Lewiston-Auburn area.

River odor at the Gulf Island and Deer Rips Dams had a very low intensity during 1962. Hydrogen sulphide was occasionally detected (olefactorily) in minute traces during June and July but never in amounts that could be determined analytically.

The odor intensity numbers for 1962 are listed in Tables #3 and #3A. They have little significance but are included for comparison with previous years especially 1944.

TABLE #3

Odor Intensity Frequencies 1962, 1961, 1944

Days Per Month

	#1			#2			#3			#4			#5		
	62	61	44	62	61	44	62	61	44	62	61	44	62	61	44
Station #1															
June	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	3	0	0	2	0	0	1	0	0	0	0	0	0
Aug.	0	0	2	0	0	1	0	0	5	0	0	0	0	0	0
Sept.	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Station #2															
June	3	8	8	0	0	11	0	0	3	0	0	0	0	0	0
July	10	3	12	0	0	10	0	0	7	0	0	5	0	0	0
Aug.	1	7	0	0	0	11	0	0	17	0	0	9	0	0	0
Sept.	0	2	5	0	0	18	0	0	5	0	0	0	0	0	0
Station #3															
June	4	4	2	0	0	14	0	0	7	0	0	0	0	0	0
July	4	8	5	1	0	10	0	0	12	0	0	7	0	0	1
Aug.	4	4	0	0	0	8	0	0	21	0	0	11	0	0	0
Sept.	2	1	3	0	0	18	0	0	12	0	0	0	0	0	0
Station #4															
June	3	0	4	0	0	13	0	0	5	0	0	5	0	0	0
July	0	3	11	0	0	9	0	0	8	0	0	19	0	0	0
Aug.	4	3	0	0	0	1	0	0	19	0	0	4	0	0	0
Sept.	0	3	3	0	0	12	0	0	14	0	0	0	0	0	0
Station #5															
June	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	4	0	0	3	0	0	1	0	0	0	0	0	0
Aug.	0	0	1	0	0	10	0	0	3	0	0	0	0	0	0
Sept.	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0
Station #6															
June	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	4	0	0	2	0	0	2	0	0	2
Aug.	0	0	0	0	0	5	0	0	12	0	0	10	0	0	0
Sept.	0	0	0	0	0	4	0	0	8	0	0	0	0	0	0
Station #7*															
June	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
July	-	0	0	-	0	1	-	0	0	-	0	0	-	0	0
Aug.	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
Sept.	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
Station #8*															
June	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
July	-	0	0	-	0	1	-	0	0	-	0	0	-	0	0
Aug.	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
Sept.	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0

\*No observations made during 1962

The average weekly intensity numbers permit classifying the river odor experience of the past twenty-years, in order of decreasing intensity, as; 1944, 1943, 1947, 1946, 1945, 1948, 1952, 1949, 1951, 1956, 1957, 1950, 1953, 1955, 1954, 1958, 1959, 1960, 1961 and 1962. There is no significant differences in the figures for 1960, 1961 and 1962.

TABLE #3A

## Comparison of Odor Intensity Numbers

	<u>1962</u>	<u>1961</u>	<u>1960</u>	<u>1959</u>	<u>1944</u>
Total Intensity Numbers	35	46	105	202	813
Number of Weeks	15	16	16	16	16
Average Weekly Intensity Number	2*	3*	7*	13	51
Maximum Weekly Intensity Number	6*	5*	10*	22	79
Maximum Odor Downtown During Week Ending	*	*	*	6/18	8/3

\*Insignificant

General Odor Coverage.

There was no general odor coverage during 1962.

TABLE #4

## General Odor Coverage

1962

Date	Highest Intensity	Type	Time Period
		NONE	

TABLE #5  
General Odor Coverage  
Station #6  
Days Per Month

	1962	1961	1960	1959	1958	1944
June	0	0	0	1	0	0
July	0	0	0	0	3	5
Aug.	0	0	0	0	0	15
Sept.	0	0	0	0	0	8
Total Days	0	0	0	1	3	28

Odor Types.

1. Pig Pen.

For the fifth consecutive year this odor has not been reported as present in the Lewiston-Auburn area. It was not observed at Gulf Island Dam but was occasionally present north of mile three.

2. Hydrogen Sulphide.

Very slight traces of hydrogen sulphide occasionally were observed in the air over the tailrace at Gulf Island Dam during June and July. It was not detected during August and September.

3. Musty.

During 1962 this odor was the only pollution odor recorded south of Gulf Island Dam. There has been a marked decrease in the frequency and intensity of this odor since 1960(cf. Table #6).

TABLE #6

## Frequency of Recorded Odor Types

## Days per Month

Type of Odor.	<u>June</u>				<u>July</u>			
	1962	1961	1960	1944	1962	1961	1960	1944
Pig-Pen	0	0	0	17	0	0	0	26
Hydrogen Sulphide	0	0	0	2	0	0	0	14
Mouldy	0	0	0	4	0	0	0	0
Musty	7	12	12	11	9	14	23	2
Sulphite	0	0	0	0	0	0	0	0
Fishy	0	0	0	0	1	0	0	0
Sour	0	0	0	0	0	0	0	1
Earthy	3	0	0	0	5	0	0	0

Type of Odor.	<u>August</u>				<u>September</u>			
	1962	1961	1960	1944	1962	1961	1960	1944
Pig-Pen	0	0	0	30	0	0	0	22
Hydrogen Sulphide	0	0	0	30	0	0	0	15
Mouldy	0	0	0	9	0	0	0	10
Musty	8	14	26	3	2	5	13	4
Sulphite	0	0	0	3	0	0	0	0
Fishy	0	0	0	0	0	0	0	7
Sour	0	0	0	0	0	0	0	0
Earthy	2	1	0	0	0	1	3	0

## TOTALS

Type of Odor	1962	1961	1960	1944
Pig-Pen	0	0	0	95
Hydrogen Sulphide	0	0	0	61
Mouldy	0	0	0	23
Musty	26	45	74	20
Sulphite	0	0	0	3
Fishy	1	0	0	7
Sour	0	0	0	1
Earthy	10	2	8	0

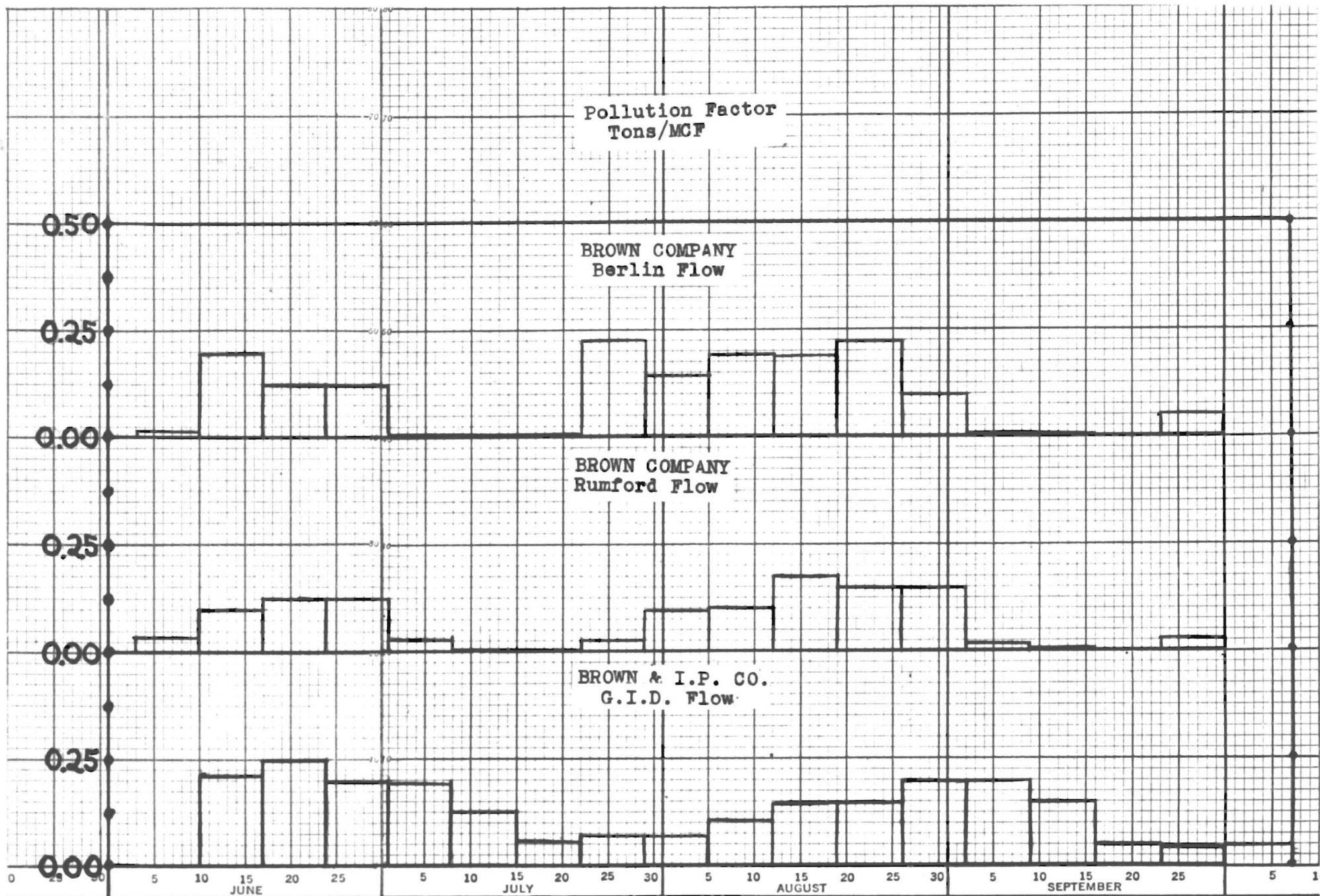
Pollution Load  
Factors.

The 1962 season was the first in which there was no sulphite pollution load discharge to the river by Oxford Paper Company. However, there was no change in the pollution factor; 0.12 for 1961 and 0.13 for 1962. This situation was due in part to flow patterns and to several unfortunate occurrences at Brown Company's magnesium base sulphite plant when relatively large amounts of liquor reached the river. Kraft wastes are not included in the factors but they contribute an appreciable pollution load. The O.C.P. and B.O.D. results obtained when the sulphite mill was down were higher than expected.

The microbial oxidation of these wastes was accomplished to a large extent in the river and therefore had only a small effect in the Pool.

Table P.L.F. #1 reveals the relatively large fluctuations in the load at Berlin, N.H. from zero to 0.23. The pollution factors calculated for Berlin, Rumford and Gulf Island Dam, of course, do not include pollution from any source other than sulphite waste liquor, also they are not corrected for the extensive attenuation, due to oxidation of the pollutants as they flow down the river.





1962

YEAR OF 19

9A

P.L.F. #1  
Weekly Pollution Factors  
1962

Week Ending	Brown Co.	Oxford Paper Company	Brown and Oxford	Brown Co. Oxford Paper I.P. Co.
	Berlin Flow		Rumford Flow	G.I.D. Flow
June 10*	0.02	0	0.04	-
17*	0.19	0	0.10	0.21
24	0.13	0	0.13	0.25
July 1	0.13	0	0.13	0.20
8	0.00	0	0.03	0.18
15	0.00	0	0.00	0.14
22	0.00	0	0.00	0.06
29	0.23	0	0.03	0.07
Aug. 5	0.14	0	0.09	0.07
12	0.19	0	0.10	0.11
19	0.18	0	0.17	0.14
26	0.23	0	0.15	0.15
Sept. 2	0.10	0	0.15	0.20
9	0.00	0	0.01	0.20
16	0.00	0	0.00	0.16
23	0.00	0	0.00	0.05
30	0.05	0	0.02	0.04
Oct. 7*	--	-	--	0.05

\*No Control

P.L.F. #1A  
Pollution Load Factor  
(Season Average at Gulf Island Dam)

<u>Year</u>	<u>Period</u>	<u>P.L.F.</u>
1962	June 18 to Sept. 30	0.13
1961	June 19 to Oct. 1	0.12
1960	June 15 to Sept. 23	0.49
1959	May 31 to Sept. 27	0.60
1958	June 16 to Sept. 28	0.81
1957	June 10 to Oct. 20	1.33
1956	June 18 to Sept. 30	1.13
1955	June 13 to Oct. 20	1.38
1954	June 14 to Sept. 19	1.00
1953	June 29 to Oct. 11	1.60
1952	June 15 to Sept. 30	1.85
1951	June 18 to Sept. 18	1.75
1950	June 16 to Sept. 17	1.90
1949	June 16 to Sept. 29	1.88*
1948	June 17 to Sept. 30	2.03
1947	June 19 to Oct. 2	2.07
1946	June 13 to Sept. 26	2.38
1945	June 14 to Sept. 27	2.09
1944	June 15 to Sept. 28	2.60
1943	July 1 to Sept. 16	1.90

\*Does not include International Paper Company's pollution load.

P.L.F. #2  
Sulphite Pulp Equivalent  
of  
Sulphite Waste Liquor  
Discharged to the Androscoggin River  
1962

Week Ending 7:00 a.m.	Brown Co. Tons	Oxford Paper Company Tons	International Paper Company Tons
June 11*	19	0	274
18*	209	0	415
25**	148.1	0	99.7
July 8	123.1	0	99.9
9	0	0	0
16	0	0	99.7
23	0	0	99.8
30	71.5	0	99.3
Aug. 6	151.2	0	99.5
13	250.2	0	99.5
20	211.6	0	100
27	293.0	0	99.3
Sept. 3	135.0	0	99.5
10	0	0	99.6
17	0	0	99.7
24	0	0	99.4
Oct. 1	68.4	0	100

\*No Control.

\*\*Quota period began June 18, 1962, 7:00 a.m. and ended  
October 1, 1962, 7:00 a.m.

River Flows.

Pollution factors are based on equivalent tons of sulphite waste liquor per million cubic feet of river water.

The average daily flows (c.f.s.) at Gulf Island Dam, May through September are recorded in Table A.D.F. #1. The flows were decidedly subnormal during May, June and July but were above normal during August and September. (Due to indirect influence of hurricane Daisy, river peaked at about 35,000 c.f.s. October 8. The average daily flow for the period July through September was 179 c.f.s. above the twenty-five year average.

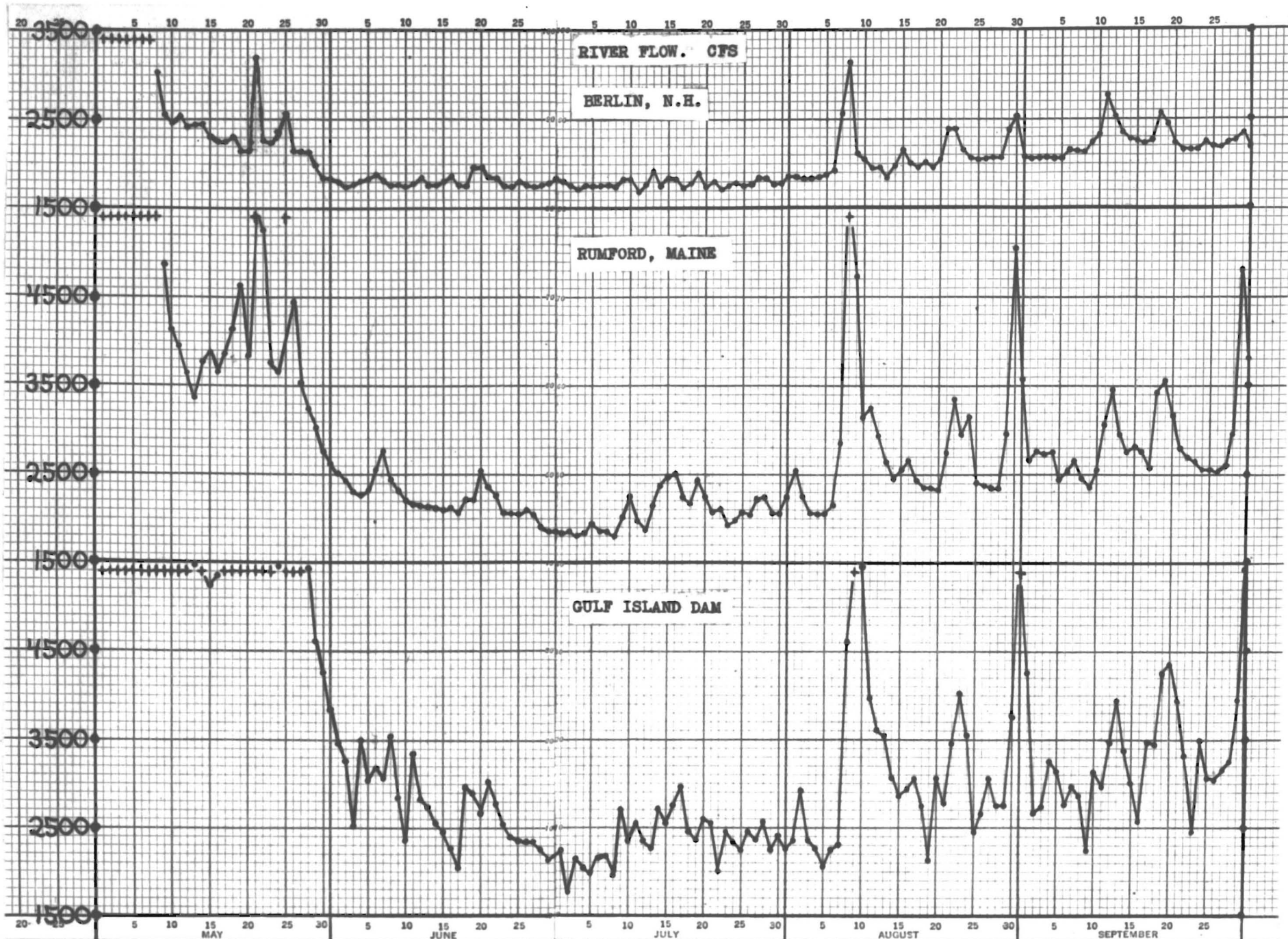
TABLE A.D.F. #1

## Average Daily Flows

C.F.S.

## Gulf Island Dam

<u>Year</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>J.A.S.</u> <u>Aver.</u>
1962	8429	2730	2345	3275	3327	2982
1961	10545	5192	3450	2452	2422	2775
1960	14346	4782	3093	2637	3464	3065
1959	4115	5964	3222	2707	3212	3050
1958	12420	3970	3105	2785	2751	2880
1938- 1962 Aver. (25 yrs.)	10392	4972	2906	2499	3003	2803



1962

YEAR OF 11

13A

## ANDROSCOGGIN RIVER FLOW

C. F. S.

May, 1962

Date	Berlin	Rumford	Gulf Island Dam
1	9989	19880	23140
2	7802	17170	21730
3	6143	13590	18230
4	4800	11140	15410
5	4328	9500	13420
6	3895	8650	11580
7	3769	7620	10780
8	3034	6730	9950
9	2565	4890	8570
10	2490	4120	7410
11	2330	3970	6630
12	2398	3640	6340
13	2425	3390	5470
14	2453	3790	5680
15	2296	3890	5230
16	2270	3660	5390
17	2265	3880	5550
18	2298	4150	5720
19	2140	4640	5980
20	2149	3850	5530
21	3201	5780	6080
22	2264	5270	7810
23	2227	3770	6250
24	2370	3680	5480
25	2538	5640	6400
26	2171	4430	7730
27	2134	3510	5690
28	2113	3250	5430
29	1991	3030	4600
30	1829	2780	4270
31	1813	2610	3810

## ANDROSCOGGIN RIVER FLOW

C. F. S.

June, 1962

Date	Berlin	Rumford	Gulf Island Dam
1	1801	2510	3470
2	1736	2420	3280
3	1774	2300	2810
4	1797	2290	3500
5	1815	2306	3030
6	1890	2570	3190
7	1811	2790	3060
8	1766	2440	3550
9	1776	2310	2830
10	1761	2200	2370
11	1792	2180	3360
12	1835	2170	2810
13	1780	2140	2710
14	1782	2130	2570
15	1796	2100	2450
16	1875	2110	2290
17	1773	2090	2040
18	1762	2210	2970
19	1971	2210	2400
20	1979	2530	2670
21	1864	2360	3040
22	1830	2260	2780
23	1761	2090	2550
24	1754	2060	2400
25	1804	2060	2390
26	1776	2090	2370
27	1734	2030	2370
28	1759	1900	2290
29	1788	1840	2180
30	1806	1850	2500



## ANDROSCOGGIN RIVER FLOW

C. F. S.

July, 1962

Date	Berlin	Rumford	Gulf Island Dam
1	1809	1820	2220
2	1777	1860	1760
3	1720	1800	2110
4	1772	1840	2030
5	1772	1930	1990
6	1768	1860	2130
7	1766	1850	2170
8	1740	1800	1950
9	1843	2010	2690
10	1820	2250	2320
11	1693	1980	2520
12	1766	1880	2320
13	1913	2150	2280
14	1760	2340	2700
15	1839	2470	2550
16	1817	2500	2760
17	1727	2230	2950
18	1789	2170	2440
19	1901	2410	2370
20	1709	2230	2600
21	1802	2070	2530
22	1712	2100	2000
23	1727	1920	2440
24	1792	1980	2310
25	1744	2090	2250
26	1781	2050	2470
27	1820	2220	2360
28	1820	2230	2560
29	1788	2090	2250
30	1789	2060	2400
31	1854	2250	2260

## ANDROSCOGGIN RIVER FLOW

C. F. S.

August, 1962

Date	Berlin	Rumford	Gulf Island Dam
1	1845	2350	2350
2	1819	2250	2910
3	1818	2080	2360
4	1835	2060	2260
5	1883	2060	2060
6	1924	2160	2250
7	2558	2880	2300
8	3119	7100	4800
9	2105	4710	7000
10	2060	3130	5490
11	1962	3230	3990
12	1964	2930	3610
13	1879	2650	3530
14	1975	2450	3090
15	2136	2530	2870
16	2002	2640	2950
17	1937	2420	3070
18	1998	2360	2720
19	1943	2380	2110
20	2016	2310	3160
21	2386	2710	2790
22	2383	3340	3440
23	2153	2950	4010
24	2055	2630	3550
25	2040	2400	2440
26	2035	2380	2650
27	2077	2370	3040
28	2059	2350	2740
29	2394	2950	2740
30	2507	3050	3760
31	2059	3590	5690

## ANDROSCOGGIN RIVER FLOW

C. F. S.

September, 1962

Date	Berlin	Rumford	Gulf Island Dam
1	2044	2690	4240
2	2044	2760	2660
3	2073	2720	2720
4	2058	2750	3230
5	2074	2430	3120
6	2147	2530	2780
7	2117	2650	2980
8	2108	2480	2890
9	2223	2390	2230
10	2314	2530	3130
11	2728	3060	2990
12	2507	3480	3460
13	2320	2960	3930
14	2283	2750	3370
15	2269	2800	3000
16	2201	2750	2570
17	2274	2590	3470
18	2584	3430	3420
19	2404	3590	4240
20	2212	3170	4350
21	2177	2790	3930
22	2157	2690	3300
23	2156	2630	2460
24	2217	2550	3500
25	2197	2560	3070
26	2194	2510	3030
27	2213	2600	3130
28	2239	2980	3210
29	2324	4810	3970
30	2193	3830	5450

## ANDROSCOGGIN RIVER FLOW

C. F. S.

October, 1962

Date	Berlin	Humford	Gulf Island Dam
1	2239	3300	5040
2	2166	3030	4090
3	2172	2800	3740
4	2253	2730	3400
5	2360	2750	3240
6	3735	11120	4040
7	5775	26870	23240
8	3675	17660	32880
9	2759	13700	20130
10	2468	7410	11250
11	2239	5010	8990
12	2364	4340	7830
13	2338	4350	7540
14	2136	4140	7010
15	2110	3570	6220
16	2340	3310	5530
17	2259	3400	4930

Water Temperatures.

The temperature of the water passing Gulf Island Dam during June was 1.6 degrees higher than the twenty year average. Through the other months of the summer the recorded temperatures were lower than the long range average. There were no high temperature peaks in the Pool; the entire season was remarkable for the relatively uniform changes in temperature. (cf Plot)

TABLE T/1  
Water Temperatures (°C)

Gulf Island Dam  
(Monthly Averages)

<u>Year</u>	<u>May*</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>
1962**	11.5	21.3	21.9	21.5	19.0
1961**	10.9	19.2	23.0	23.5	22.4
1960**	13.6	20.6	22.8	23.0	18.9
1959**	16.6	17.8	23.1	23.8	20.5
Twenty Year Average	12.2	19.7	23.5	23.1	19.4
1962 Comparison with average	-0.7	-1.6	-1.6	-1.6	-0.4

\* Based on Thursday Reports

\*\* June through September based on daily reports.

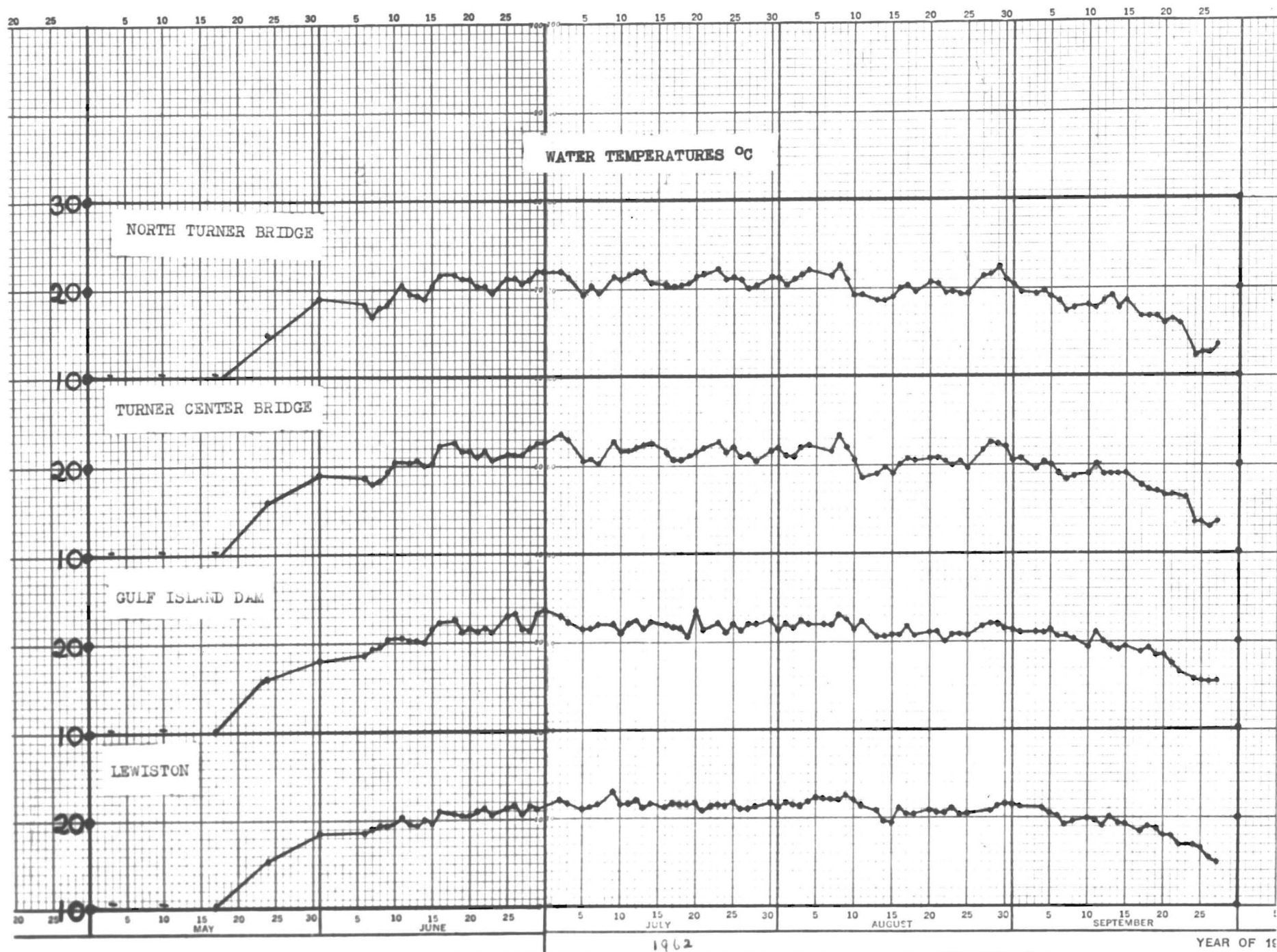


TABLE T#2

Water Temperatures (°C)  
Gulf Island Dam  
Average Daily Temperature

Week Beginning	Temp. °C	Week Beginning	Temp. °C
June 11	20.8	August 6	22.2
18	21.6	13	20.9
25	22.6	20	20.8
		27	21.6
July 2	22.2		
9	22.0	Sept. 2	20.8
16	21.9	9	19.7
23	21.7	16	18.2
30	22.0	23	15.6

Lewiston 1962.

For the third successive year there was no objectionable river odor in the downtown areas of Lewiston and Auburn and there was no general odor coverage.

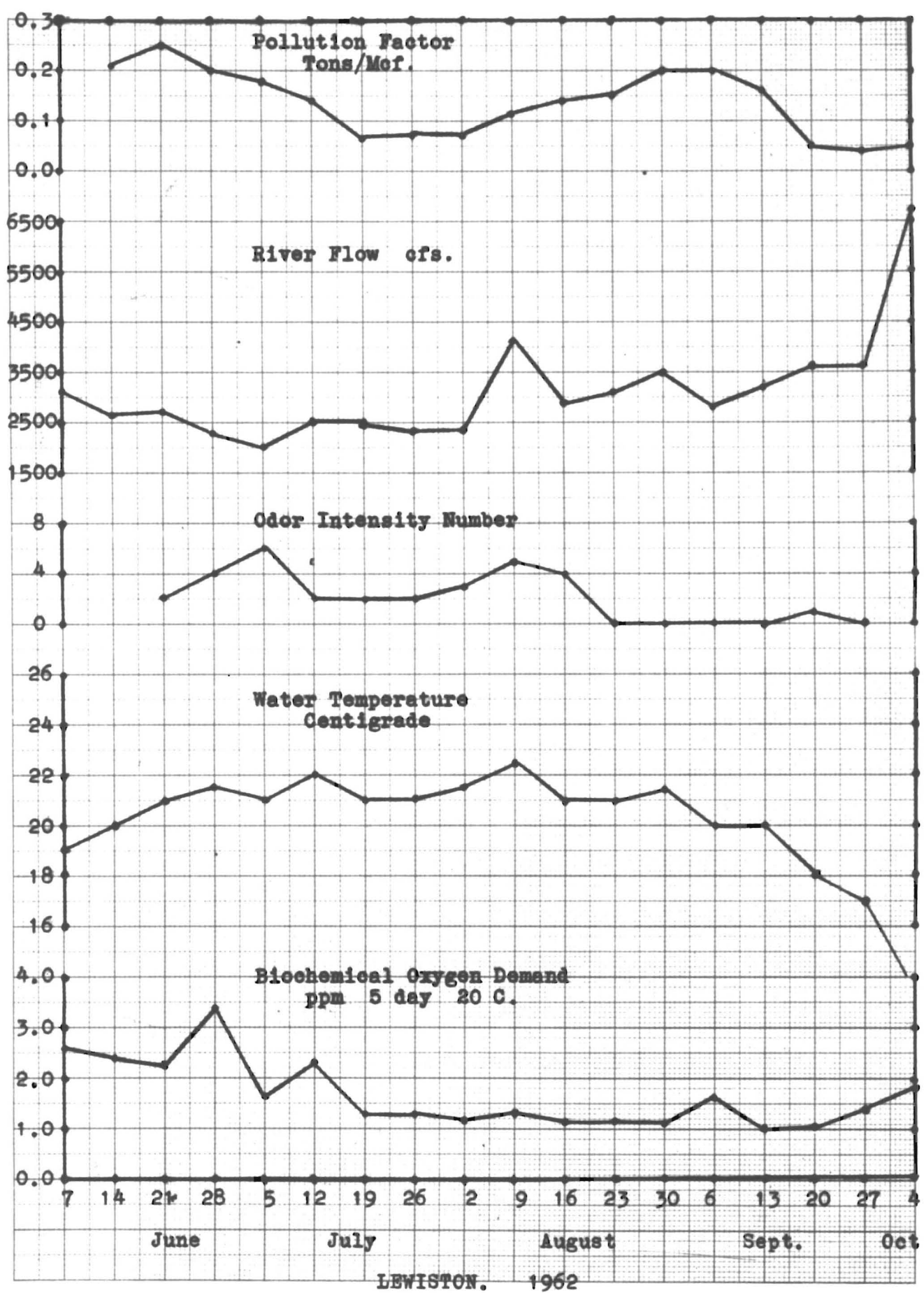
Local press reports were favorable. The coverage given to the "Conference" held by the U.S. Department of Health, Education and Welfare on September 24, 1962 was extensive. Editorial comment especially that of the Lewiston Evening Journal (of page 36 Press Reports in this Report) supported the position that an orderly, systematic procedure of pollution abatement is the best approach.

For the first time in at least twenty years hydrogen sulphide odor at Gulf Island Dam could not be detected olefactorily during August and September.

Biochemical oxygen demands in the water arriving in Lewiston were the lowest on record; they were less than two ppm during the period July through September. Methylene Blue stabilities of the river water exceeded ten days through the entire season.

SPAULDING-MOSS COMPANY  
BOSTON, MASS.  
LITHOGRAPHED IN U.S.A.

NO. 2-MM SEMCO GRAPH PAPER  
250 X 380 DIVISIONS  
GUARANTEED "ALL RAG PAPER"



LEWISTON. 1962



TABLE #7

## Lewiston Data 1962

Date Week Ending	Water** Temp.	B.O.D.** 5 day ppm	D.O.** ppm	Odor*** Intens. Number	River* Flow C.F.S.	Compens.* Tons per M.C.F.
June 7	19.0	2.62	4.30	-	3076	-
14	20.0	2.39	2.60	-	2604	0.21
21	21.0	2.22	1.10	2	2687	0.23
28	21.5	3.37	0.70	4	2327	0.20
July 5	21.0	1.62	0.68	6	2023	0.18
12	22.0	2.27	0.95	2	2483	0.14
19	20.9	1.28	0.28	2	2321	0.06
26	21.0	1.25	3.25	2	2377	0.07
Aug. 2	21.5	1.18	2.20	3	2371	0.07
9	22.5	1.30	3.23	4	4177	0.11
16	21.0	1.10	3.10	0	2903	0.14
23	21.0	1.15	2.68	0	3149	0.15
30	21.5	1.10	4.10	-	3553	0.20
Sept. 6	20.0	1.60	2.78	0	2850	0.20
13	20.0	1.02	4.05	0	3207	0.16
20	18.0	1.07	4.35	1	3596	0.05
27	15.0	1.43	5.48	0	3623	0.04
Oct. 4	13.5	1.83	6.40	-	6684	0.05

\* Based on Gulf Island Dam: Week ending Sunday.

\*\* Thursday data

\*\*\* Insignificant